

### JS005914708A

# **United States Patent** [19]

### LaGrange et al.

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# [54] COMPUTER INPUT STYLUS METHOD AND APPARATUS [75] Inventors: George W. LaGrange; George E. Gerpheide, both of Salt Lake City; Richard D. Woolley, Orem; Tom Donohue, Provo; Mike Layton, Salt Lake City, all of Utah [73] Assignee: Cirque Corporation, SLC, Utah [\*] Notice: This patent issued on a continued pros-

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[56] References Cited

### U.S. PATENT DOCUMENTS

4,580,007	4/1986	Searby et al
4,644,101	2/1987	Jin et al
4,786,764	11/1988	Padula et al
4,883,926	11/1989	Baldwin .
5,004,872	4/1991	Lesley .
5,107,541	4/1992	Hilton .
5,290,972	3/1994	Someya et al .
5,357,062	10/1994	Rockwell et al
5,365,461	11/1994	Stein et al

5,365,598	11/1994	Sklarew .
5,384,688	1/1995	Rockwell .
5,410,334	4/1995	Comerford .
5,453,759	9/1995	Seebach .
5,459,489	10/1995	Redford .
5,461,204	10/1995	Makinwa et al
5,488,204	1/1996	Mead et al

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### [57] ABSTRACT

A system comprising a conductive stylus used in conjunction with a capacitance sensitive touch pad, said system providing at least two different signals to an associated computer system. The stylus is a pen-like device having an actuable switch which when actuated substantially increases the capacitive disturbance caused by the conductive stylus on the touch pad. Before actuation, the stylus creates a capacitive disturbance sufficient for circuitry in the touch pad to measure as crossing a first predefined capacitive disturbance threshold when the foam covered conductive stylus tip is brought in contact with the surface of the touch pad. When the switch is actuated, the capacitive disturbance measured by the touch pad increases sufficient to cross a second predefined capacitive disturbance threshold. An associated computer program for drawing on a computer display places a cursor on the display when the first threshold is crossed. The computer program begins drawing on the display beginning at the cursor location when the switch is actuated causing the second threshold to be crossed. Placing a conductive foam cover over the conductive stylus tip results in the measured capacitive disturbance being amplified to thereby increase the magnitude of the capacitive disturbance of the stylus.

## 18 Claims, 6 Drawing Sheets

